

Amendments to the Drawings

The attached sheet of drawings includes changes to FIG. 6. This sheet replaces that original sheet that contained FIG. 6. In amended FIG. 6, the formatting for the reference numbers has been changed to make them smaller than the characters for the view number.

Attachment: Replacement sheet

Annotated Sheet Showing Changes

REMARKS

Applicants' would like to thank the Examiner for the careful consideration given to this case.

Claims 1-11, 15-17, 19, and 21-28 are pending in the case. Claims 1, 2, 6-8, 11, 19, and 21 have been amended and no new matter has been added.

(1.) In order to facilitate prosecution of the pending application, and without giving up the right to pursue the claims as originally filed in one or more subsequent continuing applications, applicants' have canceled claims 12-14, 18, and 20.

(2.) Figure 6 has been amended to correct the size of the view number and size of the numbers used for reference characters.

(3.) Claim 6 was amended to replace the word "is" with the word "it" in line 6 of the claim.

(4.) Claim 19 was amended to change the word "a" with the word "said" to clarify that the recited bed of material is the same as in lines 4 and 8. The term "element" was added to clarify antecedent basis for the second filter element.

(6.) To facilitate examination of the case, and without giving up the right to pursue the originally filed claims in subsequently filed continuing applications, claims 2, 8, and 11 have been amended for clarity to include the language "is selected from the group consisting of metals, metal alloys, and mixtures of these materials." Support for the amendment can be found in applicants' specification paragraph [0009].

(8.) The Examiner has rejected claims 1-3, 5-11, 21-25, and 28 under 35 U.S.C. §(102b) as allegedly being anticipated by Jha et. al. U.S. Pat. No 6,080,219. Jha discloses a media that is an open pore foam with interior cells that are interconnected and have a cell walls. This reticular structure is less than about 30 or 35% of theoretical density. The size of the pores of the foam is in the range of a few hundred to a few thousand micrometers (col. 2, lines 35-55) or (col. 6, lines 55-65). Jha disclose a membrane with pores typically about 1 to 20 microns and in Example II

about 0.5 micrometers. Claims 1 and 7 recite a porous sintered nanoparticle material having pores with a smallest aspect of less than about 200 nanometers which makes them structurally different than Jha's pores and claims 1 and 7 are therefore not anticipated (MPEP § 2114). Support for the amendment of claims 1 and 7 can be found in paragraph [0046] of applicants' specification. Since they depend from claims 1 and 7, dependent claims 2, 3, 5, 6, 8, and 9 of the instant application are not anticipated by Jha, and applicants' respectfully request that the Examiner's rejection be withdrawn.

Specifically regarding claim 5, Jha does not teach a porous sintered nanoparticle material having pores with a smallest aspect of less than about 200 nanometers. Therefore Jha does not teach a sintered porous composite material of claim 1 that includes a gas, liquid, or supercritical fluid. Claim 5 is not anticipated by Jha, and applicant's respectfully request that the Examiner's rejection be withdrawn.

Specifically regarding claims 6 and 9, Jha does not teach an element with a porous sintered nanoparticle material having pores with a smallest aspect of less than about 200 nanometers bonded to a housing. Claims 6 and 9 are not anticipated by Jha, and applicant's respectfully request that the Examiner's rejection be withdrawn.

Claim 10 includes the limitation "a sintered metal base". The foam of Jha is not a sintered metal base. Claim 10 is structurally different from Jha and is therefore not anticipated by Jha. Applicants' respectfully request that the Examiner's rejection of claims 10 and 11 be withdrawn.

Claim 21 is directed to a sintered porous composite material that has an LRV of at least 2 for 0.2 μm particles in water. Water is a *liquid* (emphasis added) where filtration occurs by sieving which is related to the pore size of the membrane. Jha in column 1, lines 15-20, refers to metal filters that have an LRV of greater than 9 in a *process gas* (emphasis added) flow for 0.1 micron particles. Water is not a process gas. The LRV of Jha's metal filters would not be 9 or greater for 0.1 micron or 0.2 micron particles in a liquid like water where filtration is dominated by sieving. The sieving filtration properties of the sintered composite material of claim 21 in a liquid like water differ from the reticulated foam of Jha, and therefore the sintered composite material of claim 21 is structurally different from that disclosed by Jha. According to the Examiner Jha uses nanoparticle materials less than 1000 nm, however they result in a reticulated foam that does not have an LRV of at least 2 for 0.2 micron or larger particles in water and

therefore claim 28 is structurally different than Jha. Claims 21, 22 and 28 are not anticipated by Jha, and Applicants' respectfully request that the Examiner's rejection of these claims be withdrawn.

Regarding claims 23 and 24, the LRV of the sintered composite material of Applicants' claims is characterized in a *liquid* like water. Jha in column 1, lines 15-20, refers to metal filters that have an LRV of greater than 9 in a *process gas* flow for 0.1 micron particles. The fine pore structure of Jha is about 0.5 microns (col. 10, lines 50-55) and more generally 1 to 20 microns (col. 6, lines 55-62). Pores of this size would not provide an LRV of at least 2 for a 0.05 micron challenge in water or an LRV of at least 4 for 0.05 micron particle challenge in water because the largest pores of Jha are 10 times larger than these particles and would not retain these sized particles in water by sieving. Claims 23 and 24 are not anticipated by Jha and Applicants' respectfully request that the Examiner's rejection be withdrawn.

Claim 25 depends from claim 21 and the sintered porous composite material of claim 21 is structurally different than the filter element of Jha. Therefore claim 25 is not anticipated by Jha. Applicants' respectfully request that the Examiner's rejection be withdrawn.

(9.) Claims 15 and 16 depend from claim 1. As amended, claim 1 is not anticipated by Jha. Therefore claims 15 and 16 are not anticipated by Jha. Applicants' respectfully request that the Examiner's rejection be withdrawn.

(10.) The Examiner has rejected claim 4 under 35 U.S.C. §(103a) as allegedly being unpatentable over Jha et. al. U.S. Pat. No 6,080,219 in view of Zeller U. S. Pat. No. 5,487,771. To establish a *prima facie* case of obviousness, the reference (or references when combined) must teach or suggest all the claim limitations (MPEP § 2142). The combination of Jha and Zeller does not teach a porous sintered nanoparticle material of claim 1 having pores with a smallest aspect of less than about 200 nanometers that includes dendritic nanoparticles. A *prima facie* case of obviousness has not been established, and it is respectfully requested that the Examiner's rejection of claim 4 be withdrawn.

(12.) The Examiner has rejected claim 17 under 35 U.S.C. §(103a) as allegedly being unpatentable over Jha et. al. U.S. Pat. No 6,080,219 in view of Subramaniam et. al. U. S. Pat.

No. 6,113,795. The combination of Jha and Subramaniam does not teach flowing a supercritical fluid through the porous sintered nanoparticle material of claim 1 having pores with a smallest aspect of less than about 200 nanometers. A *prima facie* case of obviousness has not been established, and it is respectfully requested that the rejection of claim 17 be withdrawn.

(13.) The Examiner has rejected claim 19 under 35 U.S.C. §(103a) as allegedly being unpatentable over Jha et. al. U.S. Pat. No 6,080,219 in view of Spiegelman et. al. U. S. Pat. No. 6,468,333. The apparatus of claim 19 includes the sintered composite material of claim 1 which has pores with a smallest aspect of less than about 200 nanometers which is structurally different than the filter disclosed by Jha. The combination of Jha and Spiegelman does not include all the limitations of claim 19, and it is respectfully requested that the Examiner's rejection be withdrawn.

(14.) The Examiner has rejected claim 26 under 35 U.S.C. §(102b), or in the alternative under 35 U.S.C. §(103a) as allegedly being unpatentable over Jha et. al. U.S. Pat. No 6,080,219. Jha does not disclose a porous sintered composite material that has an LRV of at least 2 for 0.2 micron particles in water and one that could support a differential pressure of greater than 60 psi across the material. Jha does not include all the limitations of claim 26 and is therefore not obvious or anticipated. It is respectfully requested that the Examiner's rejection be withdrawn.

(15.) The Examiner has rejected claim 27 under 35 U.S.C. §(103a) as allegedly being unpatentable over Jha et. al. U.S. Pat. No 6,080,219. Claim 27 recites sintered porous composite material with a thickness of less than 100 microns that has an LRV of at least 2 for a 0.2 micron particles in water. Jha may disclose that "skin 425 may vary in thickness from as thin as 0.010 inches of [sic] less" but does not disclose any "skin" that has an LRV of at least 2 for a 0.2 micron or larger particles in **water** (emphasis added). The reference does not include all the limitations of claim 27, and it is respectfully submitted that the Examiner's rejection be withdrawn.

In view of the remarks presented above, it is respectfully submitted that all of the claims are in condition for final allowance and notice to such effect is respectfully requested.



Although Applicant believes no fees are due, the Commissioner is hereby authorized to charge deposit account No. ~~501~~-908 for any fees that may be due in connection with this response.

Should the Examiner have any questions regarding these remarks, the Examiner is invited to initiate a telephone conference with the undersigned.

US 50-0436

Respectfully Submitted,

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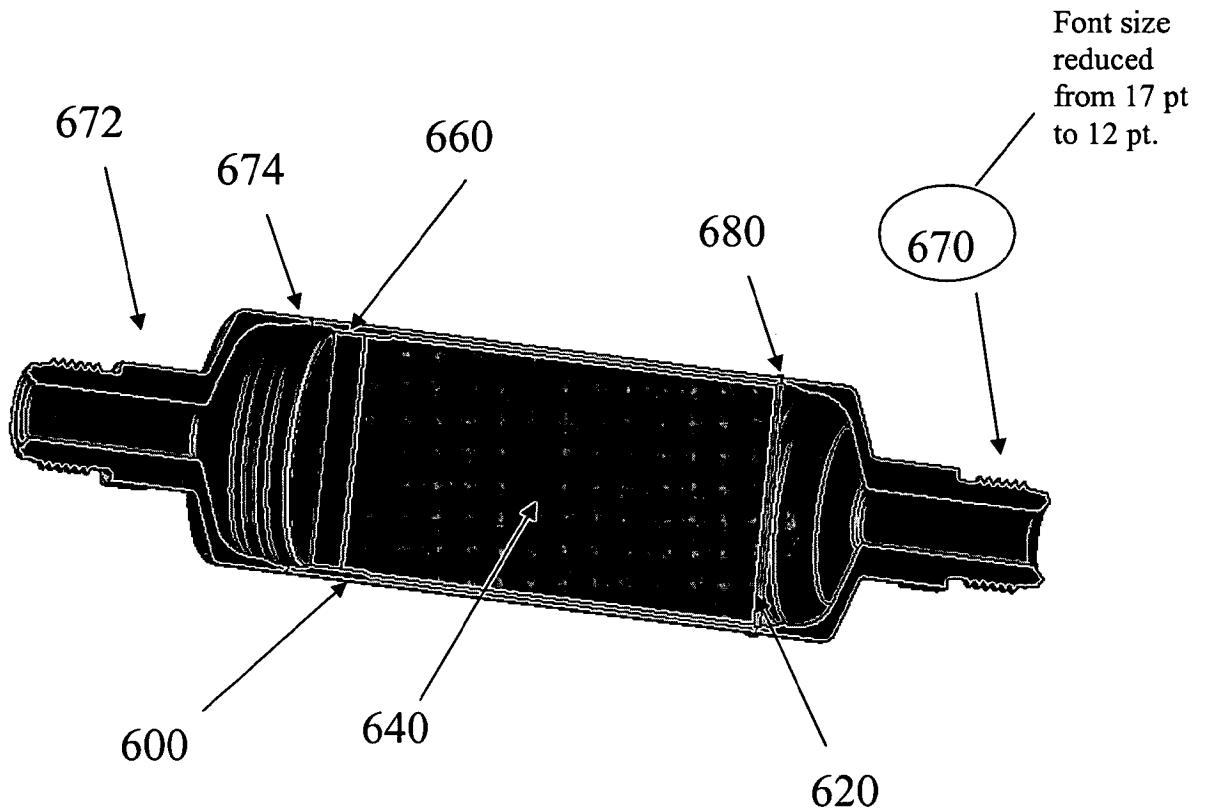
Dated: September 27, 2005

Attachments

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Appl. No. 10/733,218
Amdt. Dated September 8, 2005
Reply to Office Action of April 29, 2005
Annotated Sheet to Show Changes



Font size increased from 12 pt to 14 pt.

FIG. 6